

### ABSTRACT OF THE DISCLOSURE

Medical diagnostic ultrasound catheters are provided with improved materials for dielectric withstand strength. In one aspect, the catheter includes a braid of non-conductive material. The non-conductive braid reduces the capacitive coupling effects and allows smaller catheters or a greater number of conductors. The non-conductive braid provides both compressive and tensile strength to transmit the torque applied to the catheter. The non-conductive braid also allows fusing of components while decreasing the risk of defective manufacture. In another aspect, a dielectric film, such as a polyester film, is positioned between the transducer and any lens or window. The dielectric film allows thinner window lenses to be used, allowing smaller catheters or larger transducers. The dielectric film may also increase the sensitivity of the transducer to acoustic energy. The dielectric film prevents the lens or window material from filling kerfs in the transducer, which may eliminate the need for filling the kerfs of the transducer.